

## Preliminary observation on use of nest boxes in protected areas of Southern Sicily

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**Abstract.** In this short note we summarize the data self-made nesting in nest boxes in two areas of NATURA 2000 in southern Sicily. The models of nest boxes considered host species during the study the following period: *Falco naumanni*, *Falco tinnunculus*, *Athene noctua*, *Strix aluco*, *Sturnus unicolor*, *Parus major*, *Certhia brachydactyla*, *Corvus monedula*, *Passer montanus*.

**Keywords:** breeding, nesting boxes, southern Sicily.

### INTRODUCTION

Provide nest boxes is widely considered a great tool for conservation and study of birds (Newton, 1994). Not only small passerine but also many raptors (Hamerstrom et al., 1973). The installation of nest boxes appear to be a fundamental aid for most of the population in decline of the Lesser Kestrel as quoted in the Action plan (Inigo & Barov, 2010) and studies around Mediterranean (Negro & Hiraldo, 1993; Parr et al., 1997; Liven-Schulman et al., 2004; Franco et al., 2005; Bonal & Aparicio, 2008; Bux & Gustin, 2008). In Italy the Lesser Kestrel is a nesting, migrant and partially wintering species, concentrate in Basilicata, Puglia, Sicilia, Lampedusa, Sardegna, Toscana, Emilia-Romagna, Calabria. (Massa, 1992; Palumbo, 1997). In Sicily is widespread and with nesting colony mainly in abandoned building (Mascara & Sarà 2006; AAVV, 2008). In this paper we show the first information related to the colonization of series of nestboxes for middle-size birds in two area at close to Gela, in the area of I.B.A. “Biviere e Piana di Gela” and the close “Bosco di Santo Pietro” Natura 2000 site ITA070005.

### MATERIALS AND METHODS

For many group of birds nest boxes were create to adapt to the particular ecological condition of every species and also dimension, materials and position in the environment are largely modified also in relation to different experimental design and conservation target (Rabacchi, 1999; du Feu, 2005; Premuda et al., 2010). For this conservation project we used self-constructed nest boxes using treated plywood of 15-18mm thick and in Table 1 all measurement, typology and opening wide are reported. Two are the area where the nest were posed.

In the SIC ITA070005 “Bosco di Santo Pietro” agricultural landscape are dominant with cereal and orchards and from 2006 were implemented different nest boxes models (Tab. 2).

The second area, named in the national IBA scheme as N.166 “Biviere e Piana di Gela” (Gariboldi et al., 2002) that also cover the areas SIC/ZPS ITA050001, ITA050011 and ITA0500 12, is characterized not only by the coastal lake “Biviere” just 1,3 km from the shore but also by a sand paleo dunes area known as “Macconi” as well as a large agricultural surface mainly managed in traditional way. Here in 2010 and 2011 a serie of nest boxes were also implanted (Tab. 3).

All the nest were put on low voltage electrical poles and on wall of abandoned building. This old building represent the dominant location for the remaining small nesting colonies of Lesser kestrel in the I.B.A. territory. Nest boxes were checked visually during the nest seasons and then inspected after the possible fledging to control possible presences of different species.

Tab. 1 – Models and dimensions of nestboxes in cm. Width (w), depth (d), height (h), diameter (d).

<b>Model</b>	<b>Internal measurement</b> (w) * (d) * (h)	<b>Opening</b> (w) * (h)	<b>typology</b>
A	18x35x21	18x8,5	large, open
B1	15x48x18	15x10	large, open
B2	15x48x18	6,2x6,2	large, small opening
C1	11x15x18	18x8,5	open, small
C2	11x15x18	3 (d)	close, small opening
D	15x15x22	2,5x4	for treecreeper, prismatic with lateral triangular opening

Tab. 2 – Number and models of nest boxes in ITA070005.

<b>Model</b>	<b>N of nest box</b>	<b>position</b>
A	2	1 at 3-4 m height on trees, 1 on a wall of a barn
C1	3	3-4 m height, on trees
C2	6	3-4 m height, on trees
D	2	at 1,2 m height, on trees

Tab. 3 – Number and models of nest boxes in ITA070005.

<b>Model</b>	<b>N of nest box</b>	<b>position</b>
B1	12	from 2.2 to 5.2 m height, opening to south
B2	15	from 2.2 to 5.7 m height, opening to all espositions

## RESULTS AND DISCUSSION

The considered models of nest boxes host the following species during the study period: *Falco naumanni*, *Falco tinnunculus*, *Athene noctua*, *Strix aluco*, *Sturnus unicolor*, *Parus major*, *Certhia brachydactyla*, *Corvus monedula*, *Passer montanus* (Figg. 1, 2, 3, 4, 5, 6, Tab. 4).

In SIC ITA070005 “Bosco di Santo Pietro” *Falco tinnunculus* bred in 2007 and 2008, *Strix aluco* in 2010, *Parus major* from 2006 to 2011, *Certhia brachydactyla* in 2008 and 2009 and *Passer montanus* from 2007 to 2011. In C1 model there was any nesting activity.

In the area of I.B.A. “Biviere e Piana di Gela” in 2010 on 12 nestboxes we recorded 2 *Falco naumanni* and 2 *Corvus monedula* and other two boxes were visited by the Lesser Kestrel and the Jackdaw.

In 2011 in the same boxes were recorded nesting of *Athene noctua*, 2 *Corvus monedula*, one in the same nest and one a previous nest of Lesser kestrel. In the 15 new nest boxes of



Fig. 1 – Short-toed Treecreeper, *Certhia brachydactyla*. Santo Pietro, Caltagirone.



Fig. 2 – Eurasian Tree Sparrow, *Passer montanus*. Santo Pietro, Caltagirone.

2011 were recoded 5 *Falco naumanni*, *Athene noctua*, *Corvus monedula* and 2 *Sturnus unicolor*. The nest models B1 and B2 are different for measurement of opening (5x10 cm the first and 6.2x6.2 cm the second) and were occupied in different percentage by *Falco naumanni*: 16,7% the larger and 33,3% the smaller. In general more wide opening are less used by the Lesser Kestrel probably also for the competition with other species. In particular *Corvus monedula* used only B1 model.

Number of nest colonized is quite high in comparison with other experiment. The 27% here recorded cannot anyway compared for example with the project held in Gravina di Puglia from 2007 where the percentage is close to 8% but on 200 available nest (Gustin, 2010). Probably in Gela the low number of nest boxes available is strongly influent so in next time are sup-



Fig. 3 – Jackdaw, *Corvus monedula*. Piana di Gela.



Fig. 4 – Female Lesser Kestrel, *Falco naumanni*. Piana di Gela.



Figg. 5-6 – Female Lesser Kestrel, *Falco naumanni*. Piana di Gela (5). Tawny Owl, *Strix aluco*. Santo Pietro, Caltagirone (6).

Tab. 4 – Number of nesting in different models.

Species	Nest box model					
	A	B1	B2	C1	C2	D
<i>Falco naumanni</i>		2	5			
<i>Falco tinnunculus</i>	1					
<i>Athene noctua</i>			1			
<i>Strix aluco</i>	1					
<i>Sturnus unicolor</i>			2			
<i>Parus major</i>					10	
<i>Certhia brachydactyla</i>						3
<i>Corvus monedula</i>		4				
<i>Passer montanus</i>					5	

posed to put on other 25 nests. Also the age of implant is important as well and in the same project the box put on at least from 3 years were occupied in 60% of the cases.

This preliminary collection of information on the use of next boxes to help the conservation of Lesser Kestrel in southern Sicily can help in the choice of nest model and to confirm the value of this effort to ensure a possible better future for the species.

## RIASSUNTO

### Dati preliminari di occupazione di nidi artificiali nella Sicilia meridionale

Nella presente nota breve si riassumono i dati di nidificazione in cassette nido autocostruite in due aree di RETE NATURA 2000 della Sicilia meridionale. Nel SIC ITA070005 "Bosco di Santo Pietro" e nell'I.B.A.166 "Biviere e Piana di Gela" che copre anche i siti SIC/ZPS ITA050001, ITA050011 e ITA050012, sono stati posizionati diversi modelli di cassette nido in legno multistrato impregnato. Si sono avute nidificazioni di *Falco naumanni*, *Falco tinnunculus*, *Athene noctua*, *Strix aluco*, *Sturnus unicolor*, *Parus major*, *Certhia brachydactyla*, *Corvus monedula*, *Passer montanus*. I differenti modelli sono stati colonizzati dalle specie in base a forma e dimensioni interne e delle entrate, il Grillaio ha utilizzato solamente le cassette denominate B1 e B2, preferendo comunque anche tra queste quelle con apertura minore (6,2 x 6,2 cm) probabilmente per la competizione con la Taccola che ha utilizzato quelle a maggiore apertura. Il progetto ha mostrato la piena potenzialità delle cassette nido come strumenti di conservazione e studio, riscuotendo anche ottime percentuali di nidificazione, e sarà ampliato nel futuro con approfondimenti di studio.

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